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FINAL COUPONS

The government's DTV-to-analog converter box coupon program ended with a spike, according to just-released figures from the National Telecommunications & Information Administration, which administered the program.

On July 31, the final day that coupon applications could be applied for, 169,000 requests came in, more than double the previous day's 78,000 and more than three times the average for the previous 30 days.

Coupons could be requested by mail as well as online and via phone, so NTIA continues to fill coupon requests from those postmarked by July 31.

As of 4 p.m. on Aug. 5, over 33.9 million coupons had been redeemed, or almost 500,000 more coupons than could have been covered by the original funding for the program, at least per the accounting rules applied to those funds.

The government still has a little over $300 million in funding for the program.

The $40 coupons, up to two per household, can be applied to converter boxes that allow analog TV sets to receive an over-the-air digital signal. According to Nielsen, about a million households still are analog-only homes without converter boxes or digital TVs**.** **John Eggerton**

MONEY BACK!

The U.S. Treasury will get at least $139 million back when the National Telecommunications & Information Association has redeemed its final $40 DTV-to-analog converter box coupon, and likely more along the lines of a $200 million-plus return.

That is according to the final NTIA figures for coupon requests.

While NTIA cannot calculate exactly how much money will be returned until the program concludes at the end of October, the deadline for requests was July 31 and NTIA published a final active coupon request figure of 4,287,379 -- the number of coupons it had sent out but had not been redeemed.

With $310,796,690 in coupon funds left as of Aug. 12 (the last update), if every one of those coupons had to be redeemed, it would cost $171,496,516, leaving the government with $139,300,174 left over.

But at the current average redemption rate of about 55%, that would mean the refund to Treasury would be more on the order of $214 million. Also in the equation is how many equipment returns turn up, but those would only increase the pot of left-over dollars. If a consumer returns their converter box, the retailer must refund the money to the government, though the return rate is said to be negligible.

The converter box money was taken out of three government branches. The initial $1.83 billion funding for the program was divided into the $990 million initially handed out, with the balance in a contingency fund held in reserve to make sure there was enough money to cover analog-only households, since the initial $990 million was available to homes with analog-only sets in cable or satellite households. NTIA got the third tranche-$650 million-with passage of the Recovery Act stimulus package to help clear up a backlog of coupon orders after an accounting problem prevented NTIA from filling any more requests before more funds could be re-committed (money became available as those 45% of coupons expired without being redeemed, but the way the law was written, NTIA had to wait until those expirations before it could spend the money it was confident would be freed up).

Clearing up the coupon backlog was one of the main reasons the DTV transition date was moved from Feb. 17 to June 12. **John Eggerton**

CONSUMERS STILL BUYING

Despite the recession, we still haven't completely put the brakes on when it comes to buying new TV sets. According to a new report by the Cable & Telecommunications Association for Marketing (CTAM), 53 percent of U.S. households now own an HDTV, the first time a majority of the country's living rooms are high-def, and a big jump from the 35% HDTV penetration rate just last year.

Going hand in hand with this increase is an ever-climbing percentage of households that own a TV of 32 inches in size or bigger–59%, up from 52 percent in 2008 and 44 percent in 2007. More HDTV owners are figuring out that you need a high-def programming source to actually enjoy the extra resolution the set provides, and now 69 percent of these folk subscribe to an HD programming source, jumping from 56 percent last year. One thing consumers haven't felt the need to upgrade is their audio: 20 percent have home theater systems, which is unchanged from 2008.

2009 - 2010 OFFICERS & COMMITTEE CHAIRS

President
Pete Kosovich, CET
Peko Electronics
8155 So. 27 Street
Franklin, WI 53132-9310
(414-761-0888 pekopete@aol.com

Vice-President
Jeff Oppelt
Racing Electronics
1339 Cty Trk JJ - Box 432
Neenah, WI 54956-3539
(920)-725-7185 racingelectronic@aol.com

Secretary
Jeff Paschke, CET/CA
Future Electronics
943 N. Main Street
Oshkosh, WI 54901
(920)-426-5556 jeffp@athenet.net

Treasurer
Sandy Neuens
N66 W26738 Lakeview Dr.
Sussex, WI 53089-3430
(262)-246-3271 snlneuens@wi.rr.com

Board Members
Larry Neuens
Kemmer TV
P. O. Box 125
Sussex, WI 53089-0125
(262)-246-6495

C.E. "Chic" Young PE-CSM/CET/EHF
54 Merlham Drive
Madison, WI. 53705-4960
(608)-358-2238 chic@chorus.net

Convention Coordinator/ Board Member
Vincent Rowan CET
Rowan's TV & Appliance
312 So. Superior Avenue
Tomah, WI 54660-1636
(608)-372-6594 + FAX
rowantv@charterinternet.net

Newsletter Editor
Larry Neuens
P.O. Box 125
Sussex, WI 53089-0125
kemmertv@wi.rr.com

By-Laws & Job Clearing
Gerald Hall
9447 N. Maura Lane
Brown Deer, WI. 53223-1227
(414)-355-5883 Jjhallg@aol.com

Library
Tom Cyganek CET
5433 Tami Lane
Greenfield, WI 53221-3219
(414)-281-0526 tcyganek@wi.rr.com

Marketing & Promotional
Roy Adams CET
5158 W. Forest Home
Milwaukee, WI 53219-4527
(414)-541-9111 royal19960@aol.com

Membership
Steve Donaldson
5001 W. Good Hope Rd.
Milwaukee, WI 53223-4842
(414)-228-6400 (414)-228-6401 FAX
steved@nesselectronics.com

WESA Webmaster
Don Bauer
803 Kekoskee Street
Mayville, WI 53050-1019
920-387-2593 dabauer@charter.net

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Editor: L.E. Neuens P. O. Box 125 Sussex, WI 53089-0125 262-246-6495
snlneuens@wi.rr.com

"Professionals in Electronics"

FROM THE PRESIDENT'S PEN

Dearest WESA members,

Where has the summer gone? It's hard to believe the convention was 2 1/2 months ago already. We are beginning to work on next year's convention. It will be in "The Dells". I am working with Vinnie Rowan who has agreed to Chair the 2010 Convention. We will be looking for competitive room rates, first class amenities, and some on site meal functions. If you have any suggestions for seminars, please forward them to me.

We seem to have survived the digital transition. There are still issues some people haven't dealt with, but overall I felt it went pretty well. I did sell quite a few converters and installs, and it probably helped with some new set sales for those who didn't want to deal with converter boxes. I do have a lot of used TVs for sale if you know somebody on cable who needs another TV.

The economy is still uncertain, and people aren't spending as usual. I'm sure the economy has been a reason for the rapidly deteriorating prices on new products. We all know that prices on new technology drop eventually, but I believe that rate has been accelerated by our economic situation.

I am finding people are less likely to spend major dollars on their rear projection TV's, and in some cases their newer LCDs & DLPs. The best we can do as a group is support one another through tough times, and share ideas on new profit revenue streams. I am trying to maintain a positive attitude, and hope the fall season will bring it's usual boost to Electronics Sales & Service.

Thanks for your support & God Bless America!
Sincerely, Pete Kosovich
WESA State President

THE BEST HDMI CABLE

The rules of supply and demand don't apply to cables. A Best Buy in downtown Boston charges $140 for name-brand HDMI cables, which connect high-definition video to big-screen TVs. The Radio Shack a few blocks away wants $50 for its generic version. Online, Amazon will sell you HDMI cables for $5.

Ostensibly, the products are identical. So why the huge disparity in price? Is there a difference between the three products?

Not really.

The prolific review crew at CNET put it more harshly. "Those cables are a rip-off," says the website's guide to HDMI. "You should never pay more than $10 for a standard six-foot HDMI cable."

CNET's editors regularly use inexpensive options for both professional tests and in their own home theaters. There's no distinguishable drop in picture quality, they say. Any cable that caused unwanted dropouts or flashes was simply defective, something that can occur with all electronics – and no brand had consistent problems.

Consumer Reports, How Stuff Works, Popular Mechanics, and trials by the Monitor agree. "Our tests indicate, you can expect flawless performance from any 4-meter cable, regardless of price," writes PC World.

So why do salespeople praise the expensive kind? The secret is that stores don't make much profit off TVs and video-game consoles. So to balance out the big items, most retailers mark up the little things.

For example, the retail watchdog Con-sumerist.com published a 2008 wholesale list from Monster Cables, the high-end brand that hawks some of the most expensive cords. The suggested retail price for its four-foot HDMI cable is $79.99. But it wholesales for $38.23 – less than half the sticker price.

Monster responded by saying that final prices are up to individual stores and that its suggested markup is "much less" than the margins on clothing, jewelry, and furniture.

The company says it takes pride in the quality of its cables. They're built to withstand wear and tear, both within the insulation and where the connector meets the TV.

And Monster insists that its HDMI products are somewhat futureproof. HDMI is an evolving standard. Current cables, especially Monster's, can deliver more information per second than their original HDMI ancestors. According to Monster, this matters with 1080p video, which is the sharpest on the market, and will mean even more if TVs move toward higher-definition pictures.

But again, many eagle-eyed reviewers stress that with TVs under 1080p (such as 480p, 720p, or 1080i), you can't tell the difference. And since image quality is only as good as the weakest link, that top-notch standard only applies if both the TV and the video run at 1080p. For example, high-def broadcast TV channels stick to 720p or 1080i – and they'll most likely remain that way for some time.

Online stores offer the best deals on cables, are companies such as Amazon, Newegg, and Monoprice.

Larry's Land Mines

CELL PHONES

I have one but don't call the number and expect to talk to me. Remember when the head of the construction crew on a job site had a "mobile phone"? That's what I have. Although a bit lighter, It stays in my truck all the time. I had a fellow laying tile in my home a few years ago and he spent more time talking on his cell (to his girlfriend etc.) than working. I told him he was lucky that he wasn't charging by the hour. I refuse to talk to others while I'm in a client's home working.

So… Sandy's cell broke (a hand me down phone from our daughter), and even though Sue Shadof got me a great deal on my Siemens phone years ago, I needed a new one too. Off to the local AT&T store to make our lives simpler and better!

"I would like two new phones, I don't need a keyboard or even a camera, let's keep it basic." A bit haughtily the sales girl says they ALL have cameras now. "Here's a basic phone, it's $69 but you can get a $50 rebate!" "All you have to do is take a package that will enable you to go on the Internet. As soon as you get the rebate you can cancel that part of the service."

How much? I asked. Well there is an $18 upgrade charge and the Internet service is $15" She replied. "Will my regular monthly service remain the same?" She assured me it would…

My "Regular service" for two phones is @ $56. The next bill I received was for $138! HMM. What would you do?

That's what I DID! I went back to my local AT&T store, found that same no good, lying, $$#@*. And threw the bill on the counter. I said you said that my regular service would remain the same! I was expecting a bill that included the $18 upgrade and a $15 charge. 56 + 15 + !8 = $79 Not $138!

Well, she said, " let's see how they came up with that." "Oh, this bill is for two phones!" With calculator in hand, she added up the charges and said, (ready?), this bill is correct.

She had neglected to tell me that the $18 charge is PER phone, the $15 dollar charge is also PER phone, there was also a pro-rated charge because of the mid-month purchase of $6 PER phone. That's $78 more than my "regular service". The rebate also takes at least 8 weeks to return, so my next month's bill will also be around $30 higher.

You could actually see my heartbeat in the vein on my forehead, but I've dealt with idiots before so I calmly said: "It's going to cost me at least $108 more to receive my $100 rebate!" "That's a "fricken" stupid way to get people to sign up for a rebate for a service they don't even want!" She replied that it is a way for people to experience the many features that AT&T has to offer!" She did agree that it's a "round about way" for people to receive the rebate and she tells her boss that everyday…

I guess most surprisingly is the fact that a kind person by the name of Rachel Crowley, on the AT&T 800 customer service line felt my pain. She refunded the twin charges for $15 & $6, and even refunded the $36 charge for the upgrade. Back to my $56 regular service fee, but no rebate. (shucks) **LEN**

APPLE TV

Gene Munster has seen the future of television and it has an Apple logo on it.

In a note to clients Thursday, Piper Jaffray's senior analyst offered a scenario by which Apple would enter the cut-throat TV market by 2011 with an Apple-branded television set with digital video recording and home media functions (music, movies, games, interactive TV) built-in.

"Yes, TV hardware is a challenging business if you don't change the rules of the game," Munster writes, "but we see potential for Apple to offer best-in-class software and hardware and charge a premium."

The roadmap to Apple television (as opposed to Apple TV), as Munster sees it:

A new Apple TV set-top box within the next few months, with a TV input and DVR built in. "With the popularity of ad-based internet TV (Hulu.com) and subscription models (Netflix's Watch Instantly), we believe a-la-carte (iTunes) video purchases have lost share against other video models in recent months. As such, we believe Apple is exploring a subscription-based offering for its TV content in iTunes."

An iTunes TV Pass within the next year. "Apple could leverage its deep library of content with many network and cable channel content owners to provide unlimited access to a sub-library of its TV shows for a standard monthly fee ($30 to $40 per month). Such a product would effectively replace a consumer's monthly cable bill (~$85/month) and offer access to current and older episodes of select shows on select channels."

An Apple television set within the next two years that could wirelessly sync with iPods, iPhones and Macs. "Such a device would command a premium among a competitive field of budget TVs; we believe Apple could differentiate itself with software that makes home entertainment simple and solves a pain point for consumers (complicated TV and component systems)."

As evidence for Apple's interest for pushing deeper into the living room, Munster cites: COO Tim Cook's statement last month that the company will continue to invest in Apple TV because "we fundamentally believe there is something there for us in the future"; patents covering digital video recording; and a five-year, $500 million partnership with LG to produce LCD screens.

Munster notes that Apple currently controls an addressable user base of more than 65 million iTunes users and has sold more than 48 million iPhones and iPod touches that could be used as TV remotes or interactive TV game controllers.

"The argument that Apple will not enter the television market because prices have declined by ~70% in the past three years," he concludes, "is a similar argument used to conclude Apple would not enter the cell phone market, given phones had seen similar price declines. The bottom line, 10 million HDTV's sold in the US a year is a real market, and if history repeats itself, Apple will find a way to compete in a commoditized market with a premium priced product."

Munster expects Apple to sell 6.6 million Apple TVs in calendar 2009, up from an estimated 2.1 million in 2008 — an estimate of 3X growth that he believes may be conservative. By his calculation, every addition 1 million units Apple sells adds $.03 to Apple's EPS. **CNN**

PANASONIC 3D

Panasonic and filmmaker James Cameron are mounting a broad promotion for 3D theatrical release Avatar, including an advance push for the manufacturer's future line of advanced 3D products for the home.

The goal for the campaign is to prove to consumers the value of advanced 3D, from its current momentum in theaters to its potential inside consumers' living rooms. At this point, the summer's big-screen 3D movies, including Monsters vs. Aliens and Up, will not feature any eye-popping 3D effects on DVD and Blu-ray Disc because of the current absence of 3D-enabled equipment in homes. If those films were released in 3D versions for home viewing, they would have to be downgraded to lesser anaglyph 3D technology.

Many industry pundits expect *Avatar* to be the first advanced 3D release on Blu-ray, though it is pending the adoption of home 3D standards by the Blu-ray Disc Assn.

The bulk of the BDA's work on a Blu-ray 3D spec is expected to be completed this year, according to industry sources. By September, the engineering guidelines of the spec should be finalized. Licensing terms for the technology should be hammered out by the end of this year.

"We have every confidence that [studios] will announce products in 2010," said one source.

This fall, Panasonic will launch a 3D truck tour featuring its 'Full HD 3D' product line, including 3D-enabled Blu-ray players and a 103-inch Panasonic Viera Plasma TV running *Avatar* video.

Panasonic has predicted its 3D product slate will launch at retail sometime in 2010, which would correspond to the likely timing of an *Avatar* release on Blu-ray, expected in the spring.

"As a consumer electronics company, [Panasonic] is setting new standards in technology. Panasonic's brilliance is demonstrated by their 3D presentation for the home," Cameron said in a statement. "I've had an opportunity to view Panasonic's Full High Definition 3D technology first hand, and it was remarkable. Panasonic is the perfect teammate for us behind and in front of the camera. They play a crucial role in realizing one giant step forward for in-home entertainment."

Separately, Mitsubishi has launched a campaign marketing its own line of 3D-ready displays and home theater equipment, already for sale in stores.

The focus of Mitsubishi's promotion is a chance to win a 3D home entertainment package, including a 65-inch 3D-ready home theater TV, Aspen media server, 3D software from Nvidia and two pairs of active-shutter 3D glasses. People can enter via Mitsubishi contest partner IGN.com between Aug. 28 and Sept. 30.

"For gamers, 3D is the perfect technology to bring the action to life, and we are ready to help take it to the next level. **VIDEO BUSINESS**

THE BUSINESS PAGE

BACK LIT LED's

By now, we all know that LED-backlit LCDs are at least the short-term future for HDTVs, until (and if) OLED sets become commercially viable. Yes, they're priced too high for most consumers, but so were LCDs with 120Hz refresh rates a couple of years ago. (You can now find 120Hz sets around the $1,000 price point.) In the meantime, if you can't afford 'em, you can at least gawk at 'em.

LG's latest sets, including an LED model, are definitely worth a look. That's because the company has managed to eliminate so much of the bezel that it can advertise an "edge-to-edge" screen and pretty much get away with it. There's a conventionally backlit series, the SL80, which boasts a **150,000:1** contrast ratio (at least on the spec sheet) and LG's TruMotion 240Hz technology. The SL90 is the LED version, with a depth of just 1.15 inches. Unfortunately, LG has released no details about specific models or any pricing or availability info.

Samsung does have those details for its new 8500 LED series, which consists of two models due in September. Trying to put all other contrast ratios to shame, the 8500 series boasts a ***7,000,000:1*** ratio, while offering a **2ms** response time and **240Hz** refresh rates. Equally importantly, the sets feature Samsung's **Internet@TV - Content Service**, which makes use of the Yahoo Widget platform for networked content like weather and sports updates, Twitter, YouTube and the like. Also making use of the 8500's Ethernet connection is the Medi@2.0, which lets you stream media from the PCs on your home network to the TV. Given the prices—**$3,599.99** for the 46-inch UN46B8500 and for the $4,499.99 55-inch UN55B8500—it couldn't have killed Samsung to include built-in 802.11n Wi-Fi as another networking option, but that option is still rarely being offered. **ZDNET**

HOLOGRAM TECHNOLOGY

ESPN is working on virtual set technology that allows anchors or players in distant locations to appear as holograms on-screen. The cable sports giant plans to start using the technology on-air in the spring.

To demonstrate the virtual technology at a media briefing on its Bristol, Ct. campus, ESPN assembled longtime anchor Chris Berman and EVP of technology Chuck Pagano in a conference room, seated some eight feet apart, with a series of large HD displays behind them. Then longtime anchor Bob Ley magically appeared, seated on a chair between them, in hologram form on the TV screens.

"This is just an example of the cutting edge technology that will save us so much money on airfare for the World Cup," quipped Ley, who will host ESPN's coverage of the 2010 FIFA World Cup from South Africa. Ley, who was actually seated in a green-screen set down the hall from Pagano and Berman, then engaged in some witty repartee before walking into the room in person to remember some of ESPN's highlight moments since its founding in 1979.

Ley's virtual appearance onscreen was remarkably realistic, without the significant image blurring seen in hologram technology used by CNN on Election Night last fall.

Pagano says the hologram technique is an extension of the "EA Virtual Playbook" technology that ESPN already uses for NFL coverage, and Berman said it will allow them to bring the images of players directly into the studio for analysis or interviews.

"It's a way to bring people from the field in and people from the studio out," says Pagano.

ESPN VP of emerging technology Anthony Bailey says that Virtual Playbook technology has been great for bringing players into the set, and that the new virtual technology will be used in the other direction, to show talent in new locations.

"We thought, wouldn't it be great to have Boomer [Berman] in the studio, talking to [ESPN analyst] Tom Jackson, then have Boomer out on the field with [ESPN commentator] Mike Tirico, talking to [ESPN analyst Jon] Gruden and maybe arguing with him about something," says Bailey.

ESPN has written some software for the virtual technology internally, and learned how to tweak the lighting and the seating of talent to create the most realistic effect.

"You want to make sure that Boomer looks right in both locations," says Bailey.

LCD PRICES

Best Buy is slashing prices on big-screen HDTVs this Labor Day weekend in an effort to drive sales in a slumping market.

The big-screen category has fallen in recent months as consumers have opted to purchase less expensive, smaller sets such as 32-inch LCDs.

However, Best Buy will reduce prices on some 40-inch and above sets by as much as 40 percent.

By example, the company's Sunday ad circular, which appeared in today's newspapers, features a Samsung 50-inch 720p Plasma HDTV for just $799 -- $300 off the regular price. An Insignia 42-inch 720p Plasma HDTV is listed for just $499.

IF YOU BREAK A CFL BULB

I thought we were trying to get Mercury out of our lives! You're not going to believe what your going to have to do after you break one of those new CFL light bulbs in your home. Here's a link:

www.maine.gov/dep/rwm/homeowner/cflbreakcleanup.htm

COWBOY'S SCOREBOARD

ARLINGTON, Texas - The video boards at the new Cowboys Stadium were the center of attention at the building's first football game, and that wasn't always a good thing.

While fans were in awe of the world's largest high-definition screens - roughly 60 yards wide, 25 yards high and as clear as any 52-incher - punters for the Tennessee Titans used it for target practice before and during the preseason home opener Friday night and had little trouble hitting it.

Tennessee backup A.J. Trapasso conked it during the third quarter, forcing a do-over once the officials realized what happened. Then Trapasso nearly hit it again, prompting questions about whether the team needs to make the first major change to its $1.15 billion building.

"It is an issue," said Tennessee coach Jeff Fisher, who happens to be the co-chair of the NFL's competition committee, a group that could force the Cowboys to take action if they don't do it on their own. "Something has to get worked out."

The league is already on the case.

"We are aware of it and will continue to monitor it," NFL spokesman Greg Aiello said yesterday.

Cowboys owner Jerry Jones helped set the height at 90 feet above the field - 5 feet above the league minimum - even though tests using the team's punter, Mat McBriar, showed he could clear 100 feet. The reasoning behind cutting it close was that during the tests, McBriar was trying to boot it that high, but a regular punt has a lower arc and is usually kicked toward a sideline, not right down the middle.

The board has to go up to fit the stage for a U2 concert on Oct. 12. The Cowboys could leave it at that new height or they could use that opportunity to put in a system that would let them raise and lower it whenever they want. However, that would add to the price tag of a stadium that's already nearly double its originally projected cost of $650 million.

Trapasso acknowledged it takes a really good kick to nail the underside of the boards, then noted that most NFL punters have the leg strength to do it.

"It's nothing that is going to happen every time, but it's there," Trapasso said. "I don't know how much further up it can go, but it's in the way. . . . It does not matter where you kick it from, it is just right there in the middle of the field. It's always something that you're going to be thinking about." **AP**

DIRECTV

DirecTV announced their second quarter numbers for 2009 today and while the profits may be down DirecTV still has a reason to smile, as they are now the Worlds largest pay television provider factoring in their Latin America service which gives them **24.2 million subscribers** worldwide.

DirecTV success has been due to the part that they have been giving customers the channels they want for 15 years now. In addition if you're a sports fan then you have got to have DirecTV.

DirecTV not only offers all of the sports packages, including the NFL Sunday Ticket, MLB Extra Innings, NBA League Pass and NHL Center Ice.

"NIPPER's" HISTORY

"Nipper," the RCA Victor advertising dog, was one of the most familiar advertising icons of the early 20th century. The image was used extensively on products by RCA, the figures used in stores and outlets that sold the RCA product line or serviced them.

But for the decision of one man more than 100 years ago, the image of Nipper would have belonged to another company altogether.

Of Nipper himself, history claims the dog was born in Bristol, England in 1884, gaining his name for his habit of nipping the backs of visitors' legs. He became an orphan in 1887 when his first master, Mark Barraud, died destitute in Bristol in 1887. Nipper was taken in by Mark's younger brother Francis, a painter.

Barraud noticed his new dog was perplexed by the sound of his phonograph, wondering where the sound was coming from, but it wasn't until three years after Nipper's own death in 1895 did Barraud produce this image he called "Dog Looking at and Listening to a Phonograph" on canvas in 1898.

Like many artists, Barraud needed to make a living and took his painting to Edison-Bell—as it was one of their machines shown in the painting—and offered to sell it to them, only to be told "Dogs don't listen to phonographs."

Not put out by this rejection, Barraud went to the newly formed Berliner Gramophone Company Ltd. The manager, a Mr. Barry Owen, asked if the painting was for sale and could it be altered to show one of their machines?

Barraud suggested it could, was given one of their machines, and simply painted over the Edison machine. For his labors he is reported to have received £100 (at the time about $485 US) for the painting, and an additional £50 ($240 US) for the copyright on September 15, 1899.

Nipper shows up on this needle tin from the Victor Talking Machine Company, 1904, for Victor Half Tone needles.

In a visit to the London office in 1900, Emile Berliner saw the painting hanging on the wall in Owen's office and liked it enough that commissioned Barraud to make a copy of the painting, and he registered a trademark for it as soon as he got back to the USA.

The trade mark was granted by the Patent Office on July 10, 1900. Barraud went on to produce 24 copies of his original for the Gramophone and Victor Companies by the time of his death in 1924.

Nipper went on to become one of the most famous trademark in the world, leaving Barraud to conclude when interviewed by "The Strand" magazine in 1916: "If Nipper only knew that, he would wag his little stumpy tail so proudly. He did not know he was going to be handed down to posterity. No more did I. Nipper bids fair to go on listening into the ages."

Mike Wilcox, of Wilcox & Hall Appraisers, is a Worthologist who specializes in Art Nouveau and the Arts and Craft movement.

WIRELESS 7.1

Fabless semiconductor developer Focus Enhancements will go to the CEDIA Expo, here, to demonstrate its Summit multichannel wireless-audio technology, promoted as delivering 7.1-channel sound quality that's "virtually indistinguishable" from wired quality.

Focus also promotes Summit as overcoming the sound quality, interference, latency and cost challenges associated with other wireless technologies designed for multichannel home theaters. Its speaker-level, speaker-delay and phase controls are said to be so flexible that they can be used to focus the audio sweet spot into the corner of a room where a sectional couch might be placed.

The first speaker system to incorporate the technology will be from direct-to-consumer marketer Aperion Audio, whose preproduction prototype will be demonstrated at Focus's sound room at the convention center. Aperion's Summit-equipped powered speakers and a Summit transmitter are due in the late first quarter or early second quarter, Focus marketing VP Tony Parker said. The Aperion system will deliver 2.1- to 7.1-channel sound.

Summit achieves its quality goals by, among other things, transmitting uncompressed 48kHz/24-bit PCM over the air, using forward error correction to overcome latency problems, and using the congestion-free 5.1-5.8GHz U-NII band. That spectrum, which features 23 non-overlapping channels, was recently approved by the International Telecommunications Union (ITU) for worldwide unlicensed use near the IEEE 802.11a/n wireless-network band. In mid 2010, Focus plans to upgrade the technology to deliver 96kbps audio over the air, Campbell said.

Other technologies that avoid interference include spread-spectrum OFDM (orthogonol frequency-division multiplexing) modulation, four-antenna diversity tuning in the speakers, dynamic frequency selection to hop to a channel without interference, and up to 10ms of audio interpolation to fill in lost packets.

To make it easy to set up a wireless system, Summit-equipped systems automatically discover speakers in the room and assign channels to them. **TWICE**

VIDEO JUKEBOX

Imagine yourself, plopped in front of a big-screen television for a month, all day and all night, watching high-definition movies nonstop, and never the same movie twice.

For some, a nightmare, but a dream come true for others.

Blame (or thank) Sony for continuing to evolve the "movie jukebox," a concept that had its roots in the 45-rpm single, moved on in miniature to devices like the iPod Classic, and now arriving as the Blu-ray Disc MegaChanger.

The two models, with prices starting at $800, store and play up to 400 Blu-rays (or a combination of Blu-ray discs, conventional DVDs and CDs), making movie marathons an option and eliminating the need for all those messy plastic disc packages.

INTERNET TURNS 40

Goofy videos weren't on the minds of Len Kleinrock and his team at UCLA when they began tests 40 years ago on what would become the Internet. Neither was social networking, for that matter, nor were most of the other easy-to-use applications that have drawn more than a billion people online.

Instead the researchers sought to create an open network for freely exchanging information, an openness that ultimately spurred the innovation that would later spawn the likes of YouTube, Facebook and the World Wide Web.

There's still plenty of room for innovation today, yet the openness fostering it may be eroding. While the Internet is more widely available and faster than ever, artificial barriers threaten to constrict its growth.

Call it a mid-life crisis.

A variety of factors are to blame. Spam and hacking attacks force network operators to erect security firewalls. Authoritarian regimes block access to many sites and services within their borders. And commercial considerations spur policies that can thwart rivals, particularly on mobile devices like the iPhone.

"There is more freedom for the typical Internet user to play, to communicate, to shop — more opportunities than ever before," said Jonathan Zittrain, a law professor and co-founder of Harvard's Berkman Center for Internet & Society. "On the worrisome side, there are some longer-term trends that are making it much more possible (for information) to be controlled."

Few were paying attention back on Sept. 2, 1969, when about 20 people gathered in Kleinrock's lab at the University of California, Los Angeles, to watch as two bulky computers passed meaningless test data through a 15-foot gray cable.

That was the beginning of the fledgling Arpanet network. Stanford Research Institute joined a month later, and UC Santa Barbara and the University of Utah did by year's end.

The 1970s brought e-mail and the TCP/IP communications protocols, which allowed multiple networks to connect — and formed the Internet. The '80s gave birth to an addressing system with suffixes like ".com" and ".org" in widespread use today.

The Internet didn't become a household word until the '90s, though, after a British physicist, Tim Berners-Lee, invented the Web, a subset of the Internet that makes it easier to link resources across disparate locations. Meanwhile, service providers like America Online connected millions of people for the first time.

That early obscurity helped the Internet blossom, free from regulatory and commercial constraints that might discourage or even prohibit experimentation.

"For most of the Internet's history, no one had heard of it," Zittrain said. "That gave it time to prove itself functionally and to kind of take root."

Even the U.S. government, which funded much of the Internet's early development as a military project, largely left it alone, allowing its engineers to promote their ideal of an open network.

When Berners-Lee, working at a European physics lab, invented the Web in 1990, he could release it to the world without having to seek permission or contend with security firewalls that today treat unknown types of Internet traffic as suspect.

Even the free flow of pornography led to innovations in Internet credit card payments, online video and other technologies used in the mainstream today.

"Allow that open access, and a thousand flowers bloom," said Kleinrock, a UCLA professor since 1963. "One thing about the Internet you can predict is you will be surprised by applications you did not expect."

That idealism is eroding.

An ongoing dispute between Google Inc. and Apple Inc. underscores one such barrier.

Like some other mobile devices that connect to the Internet, the iPhone restricts the software that can run on it. Only applications Apple has vetted are allowed.

Apple recently blocked the Google Voice communications application, saying it overrides the iPhone's built-in interface. Skeptics, however, suggest the move thwarts Google's potentially competing phone services.

On desktop computers, some Internet access providers have erected barriers to curb bandwidth-gobbling file-sharing services used by their subscribers. Comcast Corp. got rebuked by Federal Communications Commission last year for blocking or delaying some forms of file-sharing; Comcast ultimately agreed to stop that.

The episode galvanized calls for the government to require "net neutrality," which essentially means that a service provider could not favor certain forms of data traffic over others. But that wouldn't be a new rule as much as a return to the principles that drove the network Kleinrock and his colleagues began building 40 years ago.

Even if service providers don't actively interfere with traffic, they can discourage consumers' unfettered use of the Internet with caps on monthly data usage. Some access providers are testing drastically lower limits that could mean extra charges for watching just a few DVD-quality movies online.

"You are less likely to try things out," said Vint Cerf, Google's chief Internet evangelist and one of the Internet's founding fathers. "No one wants a surprise bill at the end of the month."

Dave Farber, a former chief technologist at the Federal Communications Commission, said systems are far more powerful when software developers and consumers alike can simply try things out.

Farber has unlocked an older iPhone using a warrantee-voiding technique known as jail-breaking, allowing the phone to run software that Apple hasn't approved. By doing that, he could watch video before Apple supported it in the most recent version of the iPhone, and he changed the screen display when the phone is idle to give him a summary of appointments and e-mails.

(Continued next page)

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Google's Android system, for instance, allows anyone to write and distribute software without permission.

Yet even on the desktop, other barriers get in the way. Steve Crocker, an Internet pioneer who now heads the startup Shinkuro Inc., said his company has had a tough time building technology that helps people in different companies collaborate because of security firewalls that are ubiquitous on the Internet. Simply put, firewalls are designed to block incoming connections, making direct interactions between users challenging, if not impossible.

No one's suggesting the removal of all barriers, of course. Security firewalls and spam filters became crucial as the Internet grew and attracted malicious behavior, much as traffic lights eventually had to be erected as cars flooded the roads.

Removing those barriers could create larger problems.

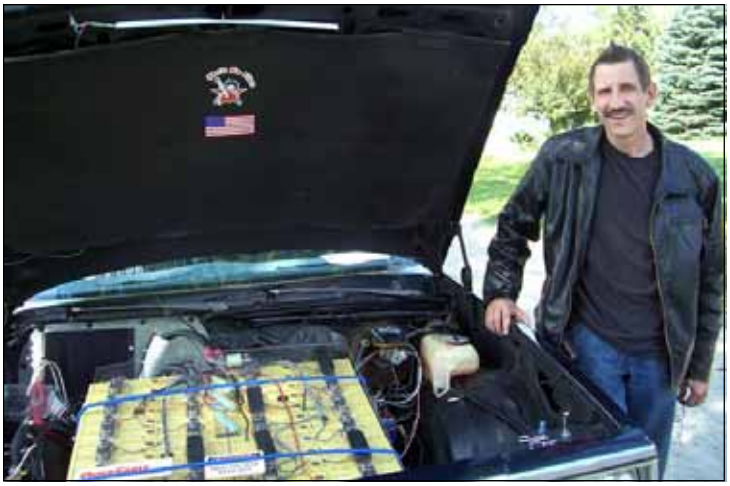
And many barriers throughout history eventually fell away — often under pressure. Early on, AOL was notorious for discouraging users from venturing from its gated community onto the broader Web. The company gradually opened the doors as its subscribers complained or fled. Today, the company is rebuilding its business around that open Internet.

What the Internet's leading engineers are trying to avoid are barriers that are so burdensome that they squash emerging ideas before they can take hold.

Already, there is evidence of controls at workplaces and service providers slowing the uptake of file-sharing and collaboration tools. Video could be next if consumers shun higher-quality and longer clips for fear of incurring extra bandwidth fees. Likewise, startups may never get a chance to reach users if mobile gatekeepers won't allow them.

If such barriers keep innovations from the hands of consumers, we may never know what else we may be missing along the way. DB & **AP**

TDL's ELECTRIC EL CAMINO



RAYMOND - Car executives looking for the next electric car might just want to slip out of the board room and stop by Tom Leitschuh's garage.

This year, he converted his 1981 Chevrolet El Camino to run completely on electric power. And, because the juice is created by the windmill and solar panels at his home on Highway K, he's not paying for it.

"I get to drive for free," he said. "I have energy independence even on the road now."

Compared to the El Camino, the Toyota Prius sitting in his driveway with the "renewable energy is sexy" bumper sticker is a gas hog. Where the engine sat, 26 batteries now fill the space under the El Camino's hood. Twenty more sit by a rear axle.

It's a load, but removing the radiator, gas tank, muffler and other unnecessary baggage helped offset the weight. Leitschuh also skipped the regular car batteries and splurged on lighter lithium ferrite batteries.

"They're the safest batteries in the world, and they'll work down to zero degrees," he said.

A charge could take him 200 miles if he manages his driving carefully, Leitschuh said, but typically the car has a range of about half that. It's plenty to get him to the hardware store for a load of lumber or bricks, since the El Camino serves as his pickup truck.

The project took about a month and a half. Including the car, which he bought used on eBay, the project cost him about $30,000. He could have done a scaled-back conversion for $10,000, which he said should be feasible for some car owners. Not to mention big car companies, which are still developing plug-in models they plan to introduce over the next few years.

"I'm wondering, 'Why aren't they doing this?' " Leitschuh said. "If a guy in a garage in Racine can do this with a little bit of help ..."

He got professionals to do the tasks he couldn't tackle, and a few companies donated parts. There have been a few wrenches, including a motor and two batteries blown. His sister told him that's "one of the things you get as a pioneer," he said.

There are still significant hurdles to clear before electric vehicles become mainstream, said John Shannon, president and CEO of Quick Cable, which donated some wiring for the El Camino. But it's looking possible.

"He's demonstrating that something like this could work," Shannon said. "Around here, this is the most serious project that I know about."

Leitschuh hopes to turn his experience into income. With his automation repair business in a lull, he's looking to do consulting on energy conversions like this.

Even as he tinkers with the car, trying to add heating and air-conditioning systems and deaden the noise from a power-steering motor, the next big project is already forming in his mind. To the scattering of vehicles on his property that run on home-brewed renewable energy, he'd like to add a "clean Corvette." **Journal Times**

More pictures and another article can be found at:

www.wired.com/autopia/2009/09/electro-camino/